FACT SHEET FOR STATE WASTE DISCHARGE PERMIT ST-8020

City of Republic

SUMMARY

Applicant: City of Republic
P. O. Box 331
Republic, WA 99166-0331

The City of Republic is located approximately 90 airline miles northwest of Spokane in the northwestern part of Ferry County (Figure 1.) Local economy is supported by logging, mining, and agriculture. The town is also the County Seat for Ferry County. Republic has a hospital, elementary and high schools, several restaurants, service stations, County maintenance shops and offices, and vehicle repair shops.

The original wastewater treatment facilities, constructed in the late 1950's were expanded in 1986 when two new lagoons were added to the original four. In 1994 the two newest lagoons were lined to reduce the potential for contamination from the treatment facility leaking into the City drinking water supply aquifer.

A hydrogeological study was conducted in 1994 to assess the potential for contamination to the City water supply system. As part of that study five new monitor wells, numbered MW101 through MW105, were installed down-gradient from the WWTP. Two of the four existing monitor wells were rehabilitated and staff gauges were installed on the Sanpoil River and on Granite Creek to measure surface water. The four existing wells are numbered MWB4, MWB5, MWB7, and MWB8. Information gathered from surface water measurements and groundwater measurements from the monitor wells would be used to test hydraulic connectivity between surface water and the ground water under the treatment lagoons and the infiltration basins. Data from all the monitor wells and stream gauges was collected from May 11, to June 15, 1994. Data ceased being recorded from the stream gauges and monitor wells MW101 through MW105 after June 1994, although continued monitoring was recommended. Because groundwater and surface water data were jointly collected over a short time frame, groundwater and surface water inter-flow is not fully understood.

Ambient groundwater quality at the site has not been established. Periodic elevated values in nitrate and ammonia have been recorded from the up-gradient monitor well, B5. However, it has never been determined if groundwater in B5 is representative of background. And, it may be directly influenced by wastewater infiltrating from unlined Cell 6 during times of the year when the aquifer is losing water to the adjacent Sanpoil River. Seasonal changes in groundwater flow direction have never been established.

Groundwater monitoring will continue to be required from monitor wells MW101, MW103, MW104, MW105, MWB4, MWB5, MWB7, and MWB8. Monitoring was to include measuring surface water levels on staff gauges SP1 through SP3 located along the Sanpoil River (Figure 2).

However, the City did not re-establish the staff gauges; consequently installation of those staff gauges will be a scheduled compliance requirement in this permit.

An update to the Hydrogeologic Study completed in 1994 will be required as a condition of this permit. The update will result in an understanding of the relationship of surface water and groundwater inter-flow, seasonal variation in groundwater flow direction, and a background water quality characterization.

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INTRODUCTION

This fact sheet is a companion document to the draft State Waste Discharge Permit No. ST. 8020. The Department of Ecology (the Department) is proposing to issue this permit, which will allow discharge of wastewater to waters of the State of Washington. This fact sheet explains the nature of the proposed discharge, the Department's decisions on limiting the pollutants in the wastewater, and the regulatory and technical bases for those decisions.

Washington State law (RCW 90.48.080 and 90.48.162) requires that a permit be issued before discharge of wastewater to waters of the state is allowed. Regulations adopted by the State include procedures for issuing permits (Chapter 173-216 WAC), technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC) and water quality criteria for ground waters (Chapter 173-200 WAC). They also establish the basis for effluent limitations and other requirements which are to be included in the permit.

This fact sheet and draft permit are available for review by interested persons as described in Appendix A--Public Involvement Information.

The fact sheet and draft permit have been reviewed by the Eastern Regional Office of the Washington State Department of Health and by the Permittee. Errors and omissions identified in these reviews have been corrected before going to public notice. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix D--Response to Comments

GENERAL INFORMATION	
Applicant	City of Republic
Facility Name and Address	City of Republic, P.O. Box 331, Republic, WA 99166-0331
Type of Treatment System:	Infiltration Basins
Discharge Location	Latitude: 48° 37' 40" N Longitude:. 118° 43' 11" W
Legal Description of Application Area	E½ of Sec. 7, T. 36 N., R.33 Latitude: 48° 37' 40" N. Longitude: 118° 43' 11" W.
Contact at Facility	Name: Casey Giddings Telephone #: (509) 775-3216 or (509) 775-2929
Responsible Official	Name: Casey Giddings Title: Public Works Director Address: P. O. Box 331 Telephone #: (509) 775-3216 or (509) 775-2929 FAX # (509) 775-3216

BACKGROUND INFORMATION

DESCRIPTION OF THE COLLECTION AND TREATMENT SYSTEM

DESCRIPTION OF FACILITY

The City of Republic is located in northwestern Ferry County and has a population of about 954, based on the 2000 census. The wastewater treatment facility currently operated by the City was upgraded in 1986 from a facultative lagoon system which intermittently discharged to the Sanpoil River to an expanded facultative lagoon system with western edge of the small valley containing the Sanpoil River and consists of; 1) headworks with a Parshall flume with continuous recorder and flow control box, 2) two unlined primary lagoon, 3) one unlined secondary lagoon, and 4) three infiltration basins.

The ground water levels in vicinity of the facility range from 8 to 14 feet with a gradient interpreted to be roughly parallel to the river channel in a north to south orientation. The upper aquifer was determined by the project consultant to be confined by an aquitard at a depth of about 20-35 feet below the surface at the project site. The lateral extent of the aquitard was not defined but, it was concluded by the consultant that the upper shallow aquifer would not migrate to the lower aquifer used by water supply wells.

Four ground water wells are located on site. They consist of two shallow wells (B4 and B5) completed at a depth of approximately 20 feet, and two deep wells (B7 and B8) completed at a depth of approximately 55 feet. One well of each type (shallow and deep) is located in close proximity to each other on the north end (upgradient) and on the south end (downgradient) of the facility. Two municipal water supply wells and one private water supply well are located downgradient of the facility.

The design engineer provided a brief operations and maintenance (O&M) manual to the City which gives directions for management of the wastewater treatment system.

DISCHARGE INFORMATION

The current permit contains a limit for flow based on the design criteria of 160,000 gallons per day.

Background ground water has not been established at this facility, therefore, it isn't clear if the discharge is in violation of ground water quality standards.

DISTRIBUTION SYSTEM INFILTRATION BASIN

Wastewater gravity flows to headworks, through a Parshall flume to a splitter box where it is directed to either one or both lined primary lagoons, cells 1 and 2. From there flow goes to an unlined secondary lagoon, Cell 3. Cell 3 has a splitter box on the outlet where flows can be directed to either Cell 4 or Cell 5, both unlined infiltration basins. An emergency overflow leads from Cell 5 to the seasonal channel (of the Sanpoil River) immediately adjacent to the infiltration basins. There is a third infiltration basin, Cell 6; flows to Cell 6 can only be received from Cell 5. Cell 6 can be isolated.

An inspection of the facility conducted on May 5, 2005 revealed that the lagoons and infiltration basins appeared to be near capacity. It's possible that the infiltration basins are starting to plug, and need to be rehabilitated, or perhaps high ground water inhibits the ability of the cells to drain.

RESIDUAL SOLIDS

The treatment facilities remove solids during the treatment of the wastewater at the headworks (grit and screenings), in addition to incidental solids (rags, scum, and other debris) removed as part of the routine maintenance of the equipment. Grit, rags, scum and screenings are drained and disposed of as solid waste at the local landfill.

GROUND WATER

A hydrogeological study was conducted at the facility in 1994; at that time water level measurements indicated ground water existed at approximately 3 to 4 feet below ground surface on the north end of the site and approximately 15 to 17 feet below ground surface near the south end of the site. Measurements were taken in March, and at that time gradient and flow was toward the south. Seasonal changes in ground water depth and flow direction have never been determined.

Because the 1994 hydrogeologic study was never updated, and the surface water/ground water interflow relationship established, ambient ground water quality at the facility has not been calculated. Periodic elevated levels in nitrate and ammonia have been recorded from the up-gradient monitor well, B5. Although B5 is up-gradient of the lagoons and infiltration basins, it has never been determined if ground water in B5 is representative of background. And, it might be directly influenced by wastewater infiltrating from unlined Cell 6 during times of the year when the aquifer is losing water to the adjacent Sanpoil River.

An update to the 1994 Hydrogeologic Study will be needed during this permit cycle to define the seasonal variation in ground water flow direction, background ground water quality, and the relationship of the surface water/ground water interflow. Seasonal variations in surface water flows will need to be monitored using stream gauges installed in the Sanpoil River at locations, SP1, SP2, and SP3 as located during the hydrogeological study completed in 1994.

PERMIT STATUS

The previous permit for this facility was issued on 9/13/2001.

An application for permit renewal was submitted to the Department on 05/16/2006 and accepted by the Department on 07/24/2006.

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility last received an inspection on August 15, 2006. The facility is operating in non-compliance regarding submittal of a Scope of Work for an Updated Ground Water Quality Evaluation, and completion of a Ground Water Quality Evaluation Study Report. The facility is in general compliance with other conditions of the previous permit.

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the permit application and in discharge monitoring reports. The proposed wastewater discharge prior to infiltration is characterized for the following parameters and is based on the monitoring report data submitted from February 2005 through February 2006:

Table 1: Wastewater Characterization

Parameter	Concentration		
	min	avg	max
pH (s.u.)	7.4		7.9
BOD_5 (mg/l)	2	24.6	114
Ammonia – N (mg/l)	0	7.9	22.5
Nitrate – N (mg/l)+ Nitrite	ND	0.05	.7
Nitrite – N (mg/l)	0.0	.1	.3
Total Organic Nitrogen (mg/l)	.2	11.9	42.1
Phosphorus (DRP as P) (mg/l)	.17	2.2	10.1
Conductivity (umhos/cm)	450	496	525
Total Dissolved Solids (mg/l)	306	405	445
Fecal Coliform (#/100 mL)	0	TNTC	TNTC
Arsenic (mg/l)	.006	.006	.006
Chromium (mg/l)	ND	ND	ND
Copper (mg/l)	---	---	.004
Lead (mg/l)		Below detect	
Mercury (mg/l)		Below detect	
Zinc (mg/l)	---	---	.008

SEPA COMPLIANCE

A SEPA checklist was submitted to the Department on June 6, 1984 for sewer system improvements. There were no findings of significant impact.

PROPOSED PERMIT LIMITATIONS

State regulations require that limitations set forth in a waste discharge permit must be either technology- or water quality-based. Wastewater must be treated using all known, available, and reasonable treatment (AKART) and not pollute the waters of the State. The minimum requirements to demonstrate compliance with the AKART standard are derived from the *Water*

Reclamation and Reuse Standards, the *Design Criteria for Municipal Wastewater Land Treatment*, and Chapter 173-221 WAC.

The permit also includes limitations on the quantity and quality of the wastewater applied to the infiltration beds that have been determined to protect the quality of the ground water. The approved engineering report includes specific design criteria for this facility. Water quality-based limitations are based upon compliance with the Ground Water Quality Standards (Chapter 173-200 WAC).

The more stringent of the water quality-based or technology-based limits are applied to each of the parameters of concern. Each of these types of limits is described in more detail below.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

All waste discharge permits issued by the Department must specify conditions requiring available and reasonable methods of prevention, control, and treatment of discharges to waters of the state (WAC 173-216-110). The following permit limitations are necessary to satisfy the requirement for AKART:

GROUND WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's ground waters including the protection of human health, WAC 173-200-100 states that waste discharge permits shall be conditioned in such a manner as to authorize only activities that will not cause violations of the Ground Water Quality Standards. Drinking water is the beneficial use generally requiring the highest quality of ground water. Providing protection to the level of drinking water standards will protect a great variety of existing and future beneficial uses.

Applicable ground water criteria as defined in Chapter 173-200 WAC and in RCW 90.48.520 for this discharge include the following:

Table 2: Ground Water Quality Criteria

Total Coliform Bacteria	1 Colony/ 100 mL
Total Dissolved Solids	500 mg/L
Chloride	250 mg/L
Sulfate	250 mg/L
Nitrate	10 mg/L
pH	6.5 to 8.5 standard units
Manganese	0.05 mg/L
Total Iron	0.3 mg/L
Toxics	No toxics in toxic amounts

The Department has reviewed existing records and is unable to determine if background ground water quality is either higher or lower than the criteria given in Chapter 173-200 WAC; therefore, the Department will use the criteria expressed in the regulation in the proposed permit. The discharges authorized by this proposed permit are not expected to interfere with beneficial uses.

No valid upgradient background data were available for list pollutants. The Permittee is required in section S.8 of the proposed permit to collect background concentrations near the point of discharge. This information may result in a permit modification or limits in the next renewal.

COMPARISON OF LIMITATIONS WITH THE EXISTING PERMIT ISSUED 9/13/01

Table 3: Comparison of Previous and New Limits

Parameter	Existing Limits	Proposed Limits
Effluent flow	.160 MGD avg/mo	.160 MGD avg/mo

MONITORING REQUIREMENTS

Monitoring, recording, and reporting are specified to verify that the treatment process is functioning correctly, that ground water criteria are not violated, and that effluent limitations are being achieved (WAC 173-216-110).

INFLUENT AND EFFLUENT MONITORING

The monitoring and testing schedule is detailed in the proposed permit under Condition S2 and S3. Specified monitoring frequencies take into account the quantity and variability of the discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring.

GROUND WATER MONITORING

The monitoring of ground water at the site is required in accordance with the Ground Water Quality Standards, Chapter 173-200 WAC. The Department has determined that this discharge has a potential to pollute the ground water. Some metal concentrations as measured at the end of pipe occasionally exceed the groundwater criteria. Therefore the Permittee is required to evaluate the impacts on ground water quality. Monitoring of the ground water at the site boundaries and within the site is an integral component of such an evaluation. The monitoring and testing schedule for ground water monitoring is detailed in the proposed permit under Condition S2.C.

OTHER PERMIT CONDITIONS

REPORTING AND RECORDKEEPING

The conditions of S3. are based on the authority to specify any appropriate reporting and recordkeeping requirements to prevent and control waste discharges (WAC 273-216-110).

FACILITY LOADING

The design criteria for this treatment facility are taken from 1992 engineering report prepared by Wyatt-Jaykim Engineers and are as follows:

Monthly average flow (max. month):	160,000 mgd
Per capita wastewater flow	120 gpd
BOD influent loading:	234 lbs./day
Design population	1300

The permit requires the Permittee to maintain adequate capacity to treat the flows and waste loading to the treatment plant (WAC 173-216-110[4]). The Permittee is required to submit an engineering report when the plant reaches 85% of its flow or loading capacity. For significant new discharges, the permit requires a new application and an engineering report (WAC 173-216-110[5]). : The permit requires the Permittee to submit annual reports comparing the actual flow and waste loadings to the design criteria for the plant.

OPERATIONS AND MAINTENANCE

The proposed permit contains condition S.5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water pollution the Permittee is required in permit condition S6. to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and State Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503 and the Washington State Department of Ecology under RCW 70.95J and Chapter 173-308 WAC. The disposal of other solid waste is under the jurisdiction of the local health district.

Requirements for monitoring sewage sludge and record keeping are included in this permit. This information will by used by Ecology to develop or update local limits and is also required under 40 CFR 503.

PRETREATMENT

WAC 173-216-110 requires that the list of prohibitions in WAC 173-216-060 be included in the permit.

Federal pretreatment requirements in 40 CFR 403 and Sections 307(b) and 308 of the Clean Water Act apply to this facility. Therefore notification to the Department is required when pretreatment prohibitions are violated and when new sources of commercial or industrial wastewater discharge are added to its system.

An industrial user survey is required to determine the extent of compliance of all industrial users of the sanitary sewer and wastewater treatment facility with federal pretreatment regulations (40 CFR Part 403 and Sections 307(b) and 308 of the Clean Water Act), with state regulations (Chapter 90.48 RCW and Chapter 173-216 WAC), and with local ordinances.

GROUND WATER QUALITY EVALUATION (UPDATED HYDROGEOLOGIC STUDY)

In accordance with WAC 173-200-080, the permit requires the Permittee to prepare and submit a updated hydrogeologic study for Departmental approval. The hydrogeologic study will be based on soil and hydrogeologic characteristics and be capable of assessing impacts on ground water. The guidelines given in *"Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems,"* Ecology 1993 are appropriate for municipal land application systems.

GENERAL CONDITIONS

General Conditions are based directly on state laws and regulations and have been standardized for all industrial waste discharge to ground water permits issued by the Department.

Condition G1 requires responsible officials or their designated representatives to sign submittals to the Department. Condition G2 requires the Permittee to allow the Department to access the treatment system, production facility, and records related to the permit. Condition G3 specifies conditions for modifying, suspending or terminating the permit. Condition G4 requires the Permittee to apply to the Department prior to increasing or varying the discharge from the levels stated in the permit application. Condition G5 requires the Permittee to submit written notice of significant increases in the amount or nature of discharges (typically new industrial discharges) into the sewer system tributary to the permitted facility. Condition G6 requires the Permittee to construct, modify, and operate the permitted facility in accordance with approved engineering documents. Condition G7 prohibits the Permittee from using the permit as a basis for violating any laws, statutes or regulations. Condition G8 requires application for permit renewal 60 days prior to the expiration of the permit. Condition G9 requires the payment of permit fees. Condition G10 describes the penalties for violating permit conditions.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to control toxics, and to protect human health and the beneficial uses of waters of the State of Washington. The Department proposes that the permit be issued for five years.

REFERENCES FOR TEXT AND APPENDICES

Faulkner, S.P., Patrick Jr., W.H., Gambrell, R.P., May-June, 1989. Field Techniques for Measuring Wetland Soil Parameters, Soil Science Society of America Journal, Vol. 53, No.3.

Washington State Department of Ecology, 1993. Guidelines for Preparation of Engineering Reports for Industrial Wastewater Land Application Systems, Ecology Publication # 93-36. 20 pp.

Washington State Department of Ecology and Department of Health, 1997. Water Reclamation and Reuse Standards, Ecology Publication # 97-23. 73 pp.

Washington State Department of Ecology, 1996. Implementation Guidance for the Ground Water Quality Standards, Ecology Publication # 96-02.

Washington State University, November, 1981. Laboratory Procedures - Soil Testing Laboratory. 38 pp.

APPENDICES

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published on August 3 and August 10, 2006 in the Republic News-Miner to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

This permit was written by R. Wayne Peterson.

APPENDIX B--GLOSSARY

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The average of the measured values obtained over a calendar month's time.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of the collection or treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Compliance Inspection - Without Sampling--A site visit for the purpose of determining the compliance of a facility with the terms and conditions of its permit or with applicable statutes and regulations.

Compliance Inspection - With Sampling--A site visit to accomplish the purpose of a Compliance Inspection - Without Sampling and as a minimum, sampling and analysis for all parameters with limits in the permit to ascertain compliance with those limits; and, for municipal facilities, sampling of influent to ascertain compliance with the 85 percent removal requirement. Additional sampling may be conducted.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Continuous Monitoring –Uninterrupted, unless otherwise noted in the permit.

Distribution Uniformity--The uniformity of infiltration (or application in the case of sprinkle or trickle irrigation) throughout the field expressed as a percent relating to the average depth infiltrated in the lowest one-quarter of the area to the average depth of water infiltrated.

Engineering Report--A document, signed by a professional licensed engineer, which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Maximum Daily Discharge Limitation--The highest allowable daily discharge of a pollutant measured during a calendar day or any 24-hour period that reasonably represents the calendar day for purposes of sampling. The daily discharge is calculated as the average measurement of the pollutant over the day.

Method Detection Level (MDL)--The minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is above zero and is determined from analysis of a sample in a given matrix containing the analyte.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Quantitation Level (QL)-- A calculated value five times the MDL (method detection level).

Soil Scientist--An individual who is registered as a Certified or Registered Professional Soil Scientist or as a Certified Professional Soil Specialist by the American Registry of Certified Professionals in Agronomy, Crops, and Soils or by the National Society of Consulting Scientists or who has the credentials for membership. Minimum requirements for eligibility are: possession of a baccalaureate, masters, or doctorate degree from a U.S. or Canadian institution with a minimum of 30 semester hours or 45 quarter hours professional core courses in agronomy,

crops or soils, and have 5,3,or 1 years, respectively, of professional experience working in the area of agronomy, crops, or soils.

State Waters--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Coliform Bacteria--A microbiological test which detects and enumerates the total coliform group of bacteria in water samples.

Total Dissolved Solids--That portion of total solids in water or wastewater that passes through a specific filter.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent pollution of the receiving water.

APPENDIX C--TECHNICAL CALCULATIONS

APPENDIX D--RESPONSE TO COMMENTS